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THE RUDIMENTAL.

The state of society in which we live at present is commonly said to be *artificial*; but this, we suspect, is a misapplication of the term. If the present state of society be a natural development of powers and tendencies inherent in human nature, it is as natural as the condition of savagery itself. It would be as proper to say that the child is a production of nature and the man a production of art, when the fact is, that the one is the natural extension or *maturisation* of the other. A more just view regards the savage as a human being in a rudimentary, and the civilised man as one in a comparatively complete or perfect state. The true peculiarity of the latter is, that, by social combination, by checking here and expanding there, by looking to the past and future as well as the present, he effects results far beyond what the savage man can even attempt; yet all he does in this way he does under impulses inherent in his nature, and the doings of the barbarian are in no respect different.

It is the province of history to unveil the process by which nature works upwards in the development of the human race; but the historian usually views his subject, so to speak, with civilised eyes, and thus, in estimating characters and actions, employs a criterion calculated only to confuse and mislead. Even in the spectacle now passing before us, in the Pacific, of savages growing visibly into civilised men, we find no materials for judging of the ordinary process of nature. The Sandwich Islands, which were discovered little more than threescore-and-ten years ago—the life of an individual—are now governed by a constitutional sovereign, with a house of nobles and a house of representatives; and the grand-daughters of those interesting savages who swam out to meet their European visitors, are described as elegantly dressed and ladylike women, sitting in their boudoirs at handsome writing-tables, with the Gospel before them, printed in their own language. Such is obviously the result of forcing, not of natural growth. 'Surrounded, coaxed, grappled by European policy,' as this humble pen has elsewhere said, 'the little barbarian state was in a perfect hotbed of civilisation, and grew like a mushroom bedded in manure.' But if an individual specimen of humanity could be found, perfect in mind, yet so organised as to be incapable of imitation, and thus shut up to a great extent in a world of its own, might we not obtain a view of at least the rudiments of what we call our nature? Still these, it must be confessed, would only be the rudiments of beings in our present stage of development; and in estimating them it would be necessary to make allowance for the fact, that con-

siderable differences of character naturally exist even in children of the same parents, reared under the same influences. We could only arrive, in short, at an approximation.

A specimen of this kind does actually exist. Many years ago we described to our readers the case of the interesting pupil of the Massachusetts Institution, Laura Bridgman, 'for whom the sun has no light, the air no sound, the flowers no colour and no smell,' and who of course is likewise destitute of speech. She is now recalled to our memory by being made the subject of a philosophical inquiry; and although this is confined to the rudiments of language traced in her vocal sounds, the paper* leads the thoughtful mind into a variety of other channels suggested but not explored by the author. Of these we shall presently notice one or two of the most interesting; but in the first place we shall describe in a few words the theory of language its advocates.

The first element of all phonetic language is the interjection. Every emotion, by quickening the respiration, causes an oppression of the chest; and this seeks relief in a way that gives birth to our sighs, laughter, moaning, and the exclamation of ah! eh! oh! which gradually become alas! helas! ototoi! &c. in different languages. Laura Bridgman, from whom most of Mr Lieber's illustrations are taken—since, being blind, deaf, and dumb, she could at first have no other teacher than nature—was accustomed to express great wonder by the sound Ho-o-ph-ph! 'and the actor of broad farce accompanies his assumption of stupid surprise with the same exclamation.' Such sounds, expressing any kind of emotion, are as natural to us as growing pale or wringing the hands; and they come even from refined and educated men with the passion and spontaneity of poor Laura's uncouth cries. When urged by her teacher to restrain these disagreeable sounds, she replied in expostulation: 'But I have very much voice—God gave me much voice;' although afterwards, when she felt an irresistible impulse, she shut herself up in her closet, and indulged 'in a surfeit of sounds'; or when deeply grieving, in unrestrained weeping. Laura, although obedient, gentle, modest, and affectionate, is so imperfectly organised that she is unable to hear her own voice, or to taste her own tears! We may add here, that the ordinary nod for affirmation and shake of the head for negation are as natural to her as the sounds in which she revels.

Mr Lieber's second class is the imitative word—such

* A Paper on the Vocal Sounds of Laura Bridgman, the Blind Deaf-Mute, at Boston; compared with the Elements of Phonetic Language. By Francis Lieber. Forming a portion of the Smithsonian Contributions to Knowledge.

as mutter, whiz, splash, &c. Out of the interjection there arises a third—such as the words formed from the sharp exhalation of the sound *f*, by which all men express disgust or contempt. This sound becomes *fle*, *fien* (to hate, in Low German), *fiend*, *pooh*, &c. It must be observed that even imitative words are not the same in all languages, but differ according to the genius of the people—the French, for instance, giving the sound of the drum by *rataclan*; the Germans by *brumberum*; and the English by *rubadub*. The fourth class proceeds from the imitative words—as, for instance, in the case of the English word *sly*, which, although it means cunning, is derived from the root of the word sliding. Another class resembles the interjectional. *Flash* is given as an example, expressing rapidity as well as brightness. Another class is illustrated by the English word *mum!* the interjection for silence, itself said to be founded on another interjection. ‘When we address erroneously a deaf-mute, or a person unable to hear and speak, and he desires to make us understand that he cannot speak, he compresses his lips and breathes strongly against the palate (so decidedly does thought or feeling animate the organs of respiration, and so phonetic or sound-sending is the nature of man.) This produces a humming sound—*um* or *mum!*’ Here we think our author is not so happy as usual. The interjection, *mum!* for silence, is obviously the sound produced when the flow of words is suddenly checked. *Ma*, or *mama* for mother, is found in nearly all languages, and is the first articulate cry of the child produced by the alternate opening and closing of the lips upon the simplest of all vowel sounds, a (pronounced as in ha.)

‘All other words are probably formed by composition, contraction, expansion, repeated transformation, and certain changes which gradually come to designate a general or peculiar relationship subsisting between certain ideas, or between the forms of words themselves in a purely grammatical point of view, the whole being essentially affected by the peculiar formative spirit with which a tribe shapes its words—whether, for instance, it is analytical; whether monosyllabic, as with the Chinese; or holophrastic, as with the American Indians. While these changes are going on with the formed words, their meaning alters according to the endless association of ideas, real or imagined affinities, the gradual expansion of the mind, the constant generalisation and abstraction, or a retrogressive degeneracy; and many other causes, mental and physical. It will have been observed that I have spoken only of the origin of words and of their phonetic formation. The meaning which they acquire constitutes a different subject, which demands attention to all the laws of psychology—of the gradual progress of civilisation—to the laws of intellectual and philological degeneracy (for this has its laws, like all disintegration or corruption), to the changes of history—and, in short, to all the altering conditions and relations which take place within, under, and around man, individually and collectively, by tribes and nations, by concentration and tribal separation, by mixture, fusion, and by emigration—in politics, religion, the arts, and every advancement and debasement.’

Such is the theory of language which Mr Lieber studied in the hardly-articulate sounds of a being without the faculty of speech, and destitute of three out of the five senses!* By the sense of touch alone is Laura capable of holding any communication with the external world, and her innate perceptions, therefore, form a most interesting subject for inquiry and reflection. In her we see the human mind in what may be said to resemble the interjectional state of language, and we are surprised to find that much of what we

have been accustomed to consider artificial in ourselves belongs in reality to nature.

A deaf-mute communicates by means of ocular signs, which have no phonetic value for him; but Laura, being blind as well as mute and deaf, traces her words on the palm of the hand of those she converses with. It seems hardly credible that her teacher, Dr Howe, could have triumphed over such extraordinary difficulties; but Laura does not merely converse in this manner—she writes letters to her friends, correct both in spelling and composition. Nature, however, was her first teacher, and in her language we recognise our own. ‘When Laura is astonished or amazed, she rounds and protrudes her lips, opens them, breathes strongly, spreads her arms, and turns her hands with extended fingers upwards, just as we do when wondering at something very uncommon. I have seen her biting her lips with an upward contraction of the facial muscles when roguishly listening at the account of some ludicrous mishap, precisely as lively persons among us would do.’ These phenomena she could never have seen or felt by the touch; they are therefore not imitative but instinctive. In like manner, when speaking of any one, she points to the spot where she had last conversed with him, as if he was there before her mind’s eye. ‘When Laura once spoke to me of her own crying, when a little child, she accompanied her words with a long face, drawing her fingers down the face, indicating the copious flow of tears; and when, on New-Year’s Day of 1844, she wished in her mind a happy new year to her benefactor Dr Howe, then in Europe, she involuntarily turned toward the east, and made with both her outstretched arms a waving and blessing motion.’ These motions are all spontaneous, like an expression passing unconsciously over the face. She has no purpose in making them, for she does not know what sight is, and does not know that they can be observed and interpreted by others.

Laura blushes and weeps, laughs and smiles, and stamps upon the ground in a transport of joy. ‘When I read your last letter to her, she laughed and clapped her hands.’ When she is merry, she often sings; and when she says a humorous thing, she is not satisfied if the person addressed does not laugh heartily. She once dreamed ‘that God had taken away her *breathe* to heaven’—a common conception of the human soul, breath and spirit being synonymous in many languages.

We come now to Laura’s innate modesty, delicacy, or sense of what is commonly called propriety. The fact of such a feeling existing in her proves that it is natural, although it does not necessarily follow that it is primitive. There are many savage tribes that are disgusting in their habits, and few if any that are pleasing; but the nature of a human being would seem to change in new developments, like the perfume of a flower. If Laura had been the child of savages, delicacy would not perhaps have been one of her characteristics.

Her general goodness, amiability, and generosity are likewise natural in the present stage of being, and do not, we think, belong to her merely as an individual. The baseness of civilised man does not come from nature but from circumstance. In our waking dreams, when the mind is abstracted from the actually-existing world, none of us are bad: we are all charitable, generous, and high-minded; and even the deadliest revenge we act in imagination has a character of justice, however wild and stern. This is our nature, however different it may seem when we are in contact with the circumstances of life. There the agitation and unequal pressure overturn the equilibrium of our minds, our bad qualities assume the ascendancy, and our actions belie our thoughts. Such a process could not have taken place with Laura. This object of the most uniform and tender solicitude has never been

* We might almost say four out of the five, her sense of taste being very defective.

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roused from her dream. Her mind is in its state of nature, where she breathes and feels only an atmosphere of love. Her thoughts have no injuries to dwell upon, but are full of benefactions. 'Laura said to me, in answer to a question why she uttered a certain sound rather than spelled the name: "I think of Janet's noise; many times when I think how she give me good things, I do not think to spell her name." And at another time, hearing her in the next room make the peculiar sound for Janet, I hastened to her, and asked her why she made it. She said, "Because I think how she do love me much; and I love her much."

If Laura was not naturally amiable, instead of these beautiful and grateful feelings, her solitude would be disturbed by envy or acquisitiveness. Let it not be supposed, however, that this amiability partakes in the slightest degree of weakness: Laura, on the contrary, has much character, and her love of power and strong will are only controlled by her sense of right. This helpless being requires to know *why* she should do such a thing, and it is not till she is satisfied with the explanation that she obeys. Laura, moreover, is inclined to vanity, and to the use of grandiloquent expressions; but her teachers, who did not educate her as a philosophical experiment, but for her own sake, have taken care to keep out of her way everything that could strengthen her foibles.

We have now to mention a curious and interesting circumstance connected with this imperfectly-organised being: it is her aesthetical feeling and sense of beauty. In former articles on this subject we endeavoured to explain Mr Hay's theory, in which he appears to demonstrate that in nature there is a science of beauty as well as of music, both being based on geometrical principles. The song of birds, and every other beautiful sound in nature, are composed on these principles; and so likewise is the Venus de Medici and every other beautiful object. Laura is a powerful evidence on this question. She cannot see: she is not seduced by colour or expression into calling that beauty which is merely lovesomeness; form is the only thing of which her senses can take cognisance; and of symmetry she judges with a severe and classical taste. The perception of beauty, therefore, is innate like the perception of harmony; and the blind, deaf, and dumb, who can form no conception of the blush that mantles on the cheek, or of the expression of the plastic lip or kindling eye, may be thrilled with the beauty of form. Let us add that Laura's sense of beauty is wholly distinct from her sense of lovesomeness. She is perfectly capable of love, although the sentiment is not inspired by colour or expression, but by manifestations of kind and generous feeling. This may receive some illustration from the beautiful picture given by Mr Lieber of the companionship of Laura. 'I have often seen her,' says he, 'seated by the side of a female friend, her left arm around the waist of her companion, and her right hand on the knee of the other, who was imprinting with rapidity on Laura's open hand what she was reading in a book before them. They thus formed the personification of the great achievement which Dr Howe has gained over appalling difficulties, never overcome, and scarcely attempted to be overcome, by any one before him—the picture of a communion of minds in spite of the enduring night and deathlike silence which enwraps poor Laura—an example of the victories in store for a sincere love of our neighbour, combined with sagacity, patience, resolute will, and what Locke calls, sound round-about common sense.'

'While I am writing these words,' says Mr Lieber, 'a tuneful mocking-bird is pouring out its melodious song before my window. Rich, and strong, and mellow as is the ever-varying music of this sprightliest of all songsters of the forest compared to the feeble and untuned sounds which Laura utters in her isolated state, yet her sounds are symbols of far greater import. She,

even without hearing her own sounds, and with the crudest organs of utterance, yet has risen to the great idea of the Word. She wills to designate by sound. In her a mind is struggling to manifest itself, and to commune with mind, revealing a part of those elements which our Maker has ordained as the means to insure the development of humanity. The bird, with all its power of varied voice, remains for ever in mental singleness; Laura, in all her lasting darkness and stillness, and with that solitary thread which unites her with the world without—the sense of touch—still proves, in every movement of her mind and urgency of her soul, that she belongs to those beings who, each in a different indestructible individuality, are yet fashioned for a mutual life, for sacred reciprocal dependence and united efforts.'

We have now seen the complicated language in which civilised men clothe their thoughts traced to its emotional rudiments, and (with the limitation stated above) we have obtained a glimpse of the skeleton of the human character stripped of the tissues woven around it by circumstance in the progress of ages. At first view the spectacle may seem anything but flattering to our pride; but examined more closely, we think it is full of encouragement. It represents man as a progressive being, whose destinies are now only in the course of development; and it shews that he has his fate in a great measure in his own hands; the powers and capacities of thought and feeling with which he is furnished by nature being, like the talents of Scripture, the materials wherewithal he is to build up his fortune. What we have called Circumstance is not the 'unspiritual god' of Byron, 'whose touch turns hope to dust,' but something that may be fashioned and controlled by Education and Reflection—the teachers who work upon our spirits, instinct, like that of the gentle Laura, with good impulses in predominance over the evil. If the mind of this blind-deaf-mute be not a *lusus naturae* as well as her organisation, we may collect from it that the impulse to vice and crime is received from without, and that we yield to it against the feelings and instinctive convictions within. We infer, besides, that innate qualities change in different stages of human development; and in our opinion, if history were only written and read under this conviction, it would no longer be the sealed book it is at present.

Having said so much about Laura, we may conclude by assuring our readers that this being,

'Sent into this breathing world not half made up,' passes a life of tranquil happiness. Sometimes, when endeavouring to comprehend the mystic faculty of sight, she regrets her inability 'to see this beautiful world'; but she finds lovelier things within her—kindly thoughts, warm affections, and high and holy aspirations; and so the poor girl thanks God for her lot, and frequently exclaims: 'I am so happy that I have been created!'

THE HUNTER'S WIFE.

TOM COOPER was a fine specimen of the North American trapper. Slightly but powerfully made, with a hardy, weather-beaten, yet handsome face, strong, indefatigable, and a crack shot, he was admirably adapted for a hunter's life. For many years he knew not what it was to have a home, but lived like the beasts he hunted—wandering from one part of the country to another in pursuit of game. All who knew Tom were much surprised when he came, with a pretty young wife, to settle within three miles of a planter's farm. Many pitied the poor young creature, who would have to lead such a solitary life; whilst others said: 'If she was fool enough to marry him, it was her own look-out.' For nearly four months Tom remained at home, and em-

ployed his time in making the old hut he had fixed on for their residence more comfortable. He cleared and tilled a small spot of land around it, and Susan began to hope that for her sake he would settle down quietly as a squatter. But these visions of happiness were soon dispelled, for as soon as this work was finished he recommenced his old erratic mode of life, and was often absent for weeks together, leaving his wife alone, yet not unprotected, for since his marriage old Nero, a favourite hound, was always left at home as her guardian. He was a noble dog—a cross between the old Scottish deerhound and the bloodhound, and would hunt an Indian as well as a deer or bear, which Tom said, 'was a proof they Ingins was a sort o' warnint, or why should the brute beast take to hunt 'em, nat'r'l like—him that took no notice o' white men?'

One clear, cold morning, about two years after their marriage, Susan was awakened by a loud crash, immediately succeeded by Nero's deep baying. She recollects that she had shut him in the house as usual the night before. Supposing he had winded some solitary wolf or bear prowling around the hut, and effected his escape, she took little notice of the circumstance; but a few moments after came a shrill wild cry, which made her blood run cold. To spring from her bed, throw on her clothes, and rush from the hut, was the work of a minute. She no longer doubted what the hound was in pursuit of. Fearful thoughts shot through her brain: she called wildly on Nero, and to her joy he came dashing through the thick underwood. As the dog drew nearer she saw that he galloped heavily, and carried in his mouth some large dark creature. Her brain reeled; she felt a cold and sickly shudder dart through her limbs. But Susan was a hunter's daughter, and all her life had been accustomed to witness scenes of danger and of horror, and in this school had learned to subdue the natural timidity of her character. With a powerful effort she recovered herself, just as Nero dropped at her feet a little Indian child, apparently between three and four years old. She bent down over him, but there was no sound or motion; she placed her hand on his little naked chest; the heart within had ceased to beat—he was dead! The deep marks of the dog's fangs were visible on the neck, but the body was unturned. Old Nero stood with his large bright eyes fixed on the face of his mistress, fawning on her, as if he expected to be praised for what he had done, and seemed to wonder why she looked so terrified. But Susan spurned him from her; and the fierce animal, who would have pulled down an Indian as he would a deer, crouched humbly at the young woman's feet. Susan carried the little body gently in her arms to the hut, and laid it on her own bed. Her first impulse was to seize a loaded rifle that hung over the fireplace, and shoot the hound; and yet she felt she could not do it, for in the lone life she led the faithful animal seemed like a dear and valued friend, who loved and watched over her, as if aware of the precious charge intrusted to him. She thought also of what her husband would say, when on his return he should find his old companion dead. Susan had never seen Tom roused. To her he had ever shewn nothing but kindness; yet she feared as well as loved him, for there was a fire in those dark eyes which told of deep, wild passions hidden in his breast, and she knew that the lives of a whole tribe of Indians would be light in the balance against that of his favourite hound.

Having securely fastened up Nero, Susan, with a heavy heart, proceeded to examine the ground around the hut. In several places she observed the impression of a small moccasined foot, but not a child's. The tracks were deeply marked, unlike the usual light, elastic tread of an Indian. From this circumstance Susan easily inferred that the woman had been carrying her child when attacked by the dog. There was nothing to shew why she had come so near the hut:

most probably the hopes of some petty plunder had been the inducement. Susan did not dare to wander far from home, fearing a band of Indians might be in the neighbourhood. She returned sorrowfully to the hut, and employed herself in blocking up the window, or rather the hole where the window had been, for the powerful hound had in his leap dashed out the entire frame, and shattered it to pieces. When this was finished, Susan dug a grave, and in it laid the little Indian boy. She made it close to the hut, for she could not bear that wolves should devour those delicate limbs, and she knew that there it would be safe. The next day Tom returned. He had been very unsuccessful, and intended setting out again in a few days in a different direction.

"Susan," he said, when he had heard her sad story, "I wish you'd let the child wheer the dog killed him. The squaw's high sartain to come back a-seekin' for the body, and 'tis a pity the poor crittur should be disappointed. Besides, the Ingins will be high sartain to put it down to us; whereas if so be as they'd found the body 'pon the spot, maybe they'd understand as 'twas an accident like, for they're unkinnomun cunning warnint, though they a'nt got sense like Christians."

"Why do you think the poor woman came here?" said Susan. "I never knew an Indian squaw so near the hut before."

She fancied a dark shadow flitted across her husband's brow. He made no reply; and on her repeating the question, said angrily—"how should he know? 'Twas as well to ask for a bear's reasons as an Ingins'."

Tom only stayed at home long enough to mend the broken window, and plant a small spot of Indian corn, and then again set out, telling Susan not to expect him home in less than a month. "If that squaw comes this way agin," he said, "as maybe she will, just put out any broken victuals you've a-got for the poor crittur; though maybe she wont come, for they Ingins be unkinnomun skeary." Susan wondered at his taking an interest in the woman, and often thought of that dark look she had noticed, and of Tom's unwillingness to speak on the subject. She never knew that on his last hunting expedition, when hiding some skins which he intended to fetch on his return, he had observed an Indian watching him, and had shot him with as little mercy as he would have shewn a wolf. On Tom's return to the spot the body was gone; and in the soft damp soil was the mark of an Indian squaw's foot, and by its side a little child's. He was sorry then for the deed he had done: he thought of the grief of the poor widow, and how it would be possible for her to live until she could reach her tribe, who were far, far distant, at the foot of the Rocky Mountains; and now to feel that through his means, too, she had lost her child, put thoughts into his mind that had never before found a place there. He thought that one God had formed the Red Man as well as the White—of the souls of the many Indians hurried into eternity by his unerring rifle; and they perhaps were more fitted for their "happy hunting-grounds" than he for the white man's heaven. In this state of mind, every word his wife had said to him seemed a reproach, and he was glad again to be alone in the forest with his rifle and his hounds.

The afternoon of the third day after Tom's departure, as Susan was sitting at work, she heard something scratching and whining at the door. Nero, who was by her side, evinced no signs of anger, but ran to the door, shewing his white teeth, as was his custom when pleased. Susan unbarred it, when to her astonishment the two deerhounds her husband had taken with him walked into the hut, looking weary and soiled. At first she thought Tom might have killed a deer not far from home, and had brought her a fresh supply of venison; but no one was there. She rushed from the hut, and soon, breathless and terrified, reached the squatter's cabin. John Wilton and his three sons were

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just returned from the clearings, when Susan ran into their comfortable kitchen; her long black hair streaming on her shoulders, and her wild and bloodshot eyes, gave her the appearance of a maniac. In a few unconnected words she explained to them the cause of her terror, and implored them to set off immediately in search of her husband. It was in vain they told her of the uselessness of going at that time—of the impossibility of following a trail in the dark. She said she would go herself; she felt sure of finding him; and at last they were obliged to use force to prevent her leaving the house.

The next morning at daybreak Wilton and his two sons were mounted, and ready to set out, intending to take Nero with them; but nothing could induce him to leave his mistress: he resisted passively for some time, until one of the young men attempted to pass a rope round his neck, to drag him away: then his forbearance vanished; he sprung on his tormentor, threw him down, and would have strangled him if Susan had not been present. Finding it impossible to make Nero accompany them, they left without him, but had not proceeded many miles before he and his mistress were at their side. They begged Susan to return, told her of the hardships she must endure, and of the inconvenience she would be to them. It was of no avail; she had but one answer: 'I am a hunter's daughter, and a hunter's wife.' She told them that knowing how useful Nero would be to them in their search, she had secretly taken a horse and followed them.

The party rode first to Tom Cooper's hut, and there having dismounted, leading their horses through the forest, followed the trail, as only men long accustomed to a savage life can do. At night they lay on the ground, covered with their thick bear-skin cloaks: for Susan only they heaped up a bed of dried leaves; but she refused to occupy it, saying it was her duty to bear the same hardships they did. Ever since their departure she had shewn no sign of sorrow. Although slight and delicately formed, she never appeared fatigued: her whole soul was absorbed in one longing desire—to find her husband's body; for from the first she had abandoned the hope of ever again seeing him in life. This desire supported her through everything. Early the next morning they were again on the trail. About noon, as they were crossing a small brook, the hound suddenly dashed away from them, and was lost in the thicket. At first they fancied they might have crossed the track of a deer or wolf; but a long mournful howl soon told the sad truth, for not far from the brook lay the faithful dog on the dead body of his master, which was pierced to the heart by an Indian arrow.

The murderer had apparently been afraid to approach on account of the dogs, for the body was left as it had fallen—not even the rifle was gone. No sign of Indians could be discovered save one small footprint, which was instantly pronounced to be that of a squaw. Susan shewed no grief at the sight of the body; she maintained the same forced calmness, and seemed comforted that it was found. Old Wilton stayed with her to remove all that now remained of her darling husband, and his two sons again set out on the trail, which soon led them into the open prairie, where it was easily traced through the tall thick grass. They continued riding all that afternoon, and the next morning by day-break were again on the track, which they followed to the banks of a wide but shallow stream. There they saw the remains of a fire. One of the brothers thrust his hand among the ashes, which were still warm. They crossed the river, and in the soft sand on the opposite bank saw again the print of small moccasined footsteps. Here they were at a loss; for the rank prairie grass had been consumed by one of those fearful fires so common in the prairies, and in its stead grew short sweet herbage, where even an Indian's eye could observe no trace. They were on the point of abandon-

ing the pursuit, when Richard, the younger of the two, called his brother's attention to Nero, who had of his own accord left his mistress to accompany them, as if he now understood what they were about. The hound was trotting to and fro, with his nose to the ground, as if endeavouring to pick out a cold scent. Edward laughed at his brother, and pointed to the track of a deer that had come to drink at the river. At last he agreed to follow Nero, who was now cantering slowly across the prairie. The pace gradually increased, until, on a spot where the grass had grown more luxuriantly than elsewhere, Nero threw up his nose, gave a deep bay, and started off at so furious a pace, that although well mounted, they had great difficulty in keeping up with him. He soon brought them to the borders of another forest, where, finding it impossible to take their horses farther, they tethered them to a tree, and set off again on foot. They lost sight of the hound, but still from time to time heard his loud baying far away. At last they fancied it sounded nearer instead of becoming less distinct; and of this they were soon convinced. They still went on in the direction whence the sound proceeded, until they saw Nero sitting with his fore-paws against the trunk of a tree, no longer mouthing like a well-trained hound, but yelling like a fury. They looked up in the tree, but could see nothing; until at last Edward espied a large hollow about half way up the trunk. 'I was right, you see,' he said. 'After all, it's nothing but a bear; but we may as well shoot the brute that has given us so much trouble.'

They set to work immediately with their axes to fell the tree. It began to totter, when a dark object, they could not tell what in the dim twilight, crawled from its place of concealment to the extremity of a branch, and from thence sprung into the next tree. Snatching up their rifles, they both fired together; when, to their astonishment, instead of a bear, a young Indian squaw, with a wild yell, fell to the ground. They ran to the spot where she lay motionless, and carried her to the borders of the wood where they had that morning dismounted. Richard lifted her on his horse, and springing himself into the saddle, carried the almost lifeless body before him. The poor creature never spoke. Several times they stopped, thinking she was dead: her pulse only told the spirit had not flown from its earthly tenement. When they reached the river which had been crossed by them before, they washed the wounds, and sprinkled water on her face. This appeared to revive her; and when Richard again lifted her in his arms to place her on his horse, he fancied he heard her mutter in Iroquois one word—'revenged!' It was a strange sight, these two powerful men tending so carefully the being they had a few hours before sought to slay, and endeavouring to stanch the blood that flowed from wounds which they had made! Yet so it was. It would have appeared to them a sin to leave the Indian woman to die; yet they felt no remorse at having inflicted the wound, and doubtless would have been better pleased had it been mortal; but they would not have murdered a wounded enemy, even an Indian warrior, still less a squaw. The party continued their journey until midnight, when they stopped to rest their jaded horses. Having wrapped the squaw in their bearskins, they lay down themselves with no covering save the clothes they wore. They were in no want of provisions, as not knowing when they might return, they had taken a good supply of bread and dried venison, not wishing to lose any precious time in seeking food whilst on the trail. The brandy still remaining in their flasks they preserved for the use of their captive. The evening of the following day they reached the trapper's hut, where they were not a little surprised to find Susan. She told them that although John Wilton had begged her to live with them, she could not bear to leave the spot where everything reminded her of one to think

of whom was now her only consolation, and that whilst she had Nero, she feared nothing. They needed not to tell their mournful tale—Susan already understood it but too clearly. She begged them to leave the Indian woman with her. ‘You have no one,’ she said, ‘to tend and watch her as I can do; besides, it is not right that I should lay such a burthen on you.’ Although unwilling to impose on her the painful task of nursing her husband’s murdereress, they could not but allow that she was right; and seeing how earnestly she desired it, at last consented to leave the Indian woman with her.

For many long weeks Susan nursed her charge as tenderly as if she had been her sister. At first she lay almost motionless, and rarely spoke; then she grew delirious, and raved wildly. Susan fortunately could not understand what she said, but often turned shudderingly away when the Indian woman would strive to rise from her bed, and move her arms as if drawing a bow; or yell wildly, and cower in terror beneath the clothes, reacting in her delirium the fearful scenes through which she had passed. By degrees reason returned; she gradually got better, but seemed restless and unhappy, and could not bear the sight of Nero. The first proof of returning reason she had shewn was to shriek in terror when he once accidentally followed his mistress into the room where she lay. One morning Susan missed her; she searched around the hut, but she was gone, without having taken farewell of her kind benefactress.

A few years after Susan Cooper (no longer ‘pretty Susan,’ for time and grief had done their work) heard late one night a hurried knock, which was repeated several times before she could unfasten the door, each time more loudly than before. She called to ask who it was at that hour of the night. A few hurried words in Iroquois were the reply, and Susan congratulated herself on having spoken before unbarring the door. But on listening again, she distinctly heard the same voice say, ‘Quick—quick!’ and recognised it as the Indian woman’s whom she had nursed. The door was instantly opened, when the squaw rushed into the hut, seized Susan by the arm, and made signs to her to come away. She was too much excited to remember then the few words of English she had picked up when living with the white woman. Expressing her meaning by gestures with a clearness peculiar to the Indians, she dragged rather than led Susan from the hut. They had just reached the edge of the forest when the wild yell of the Indians sounded in their ears. Having gone with Susan a little way into the forest her guide left her. For nearly four hours she lay there half-dead with cold and terror, not daring to move from her place of concealment. She saw the flames of the dwelling where so many lonely hours had been passed rising above the trees, and heard the shrill ‘whoops’ of the retiring Indians. Nero, who was lying by her side, suddenly rose and gave a low growl. Silently a dark figure came gliding among the trees directly to the spot where she lay. She gave herself up for lost; but it was the Indian woman who came to her, and dropped at her feet a bag of money, the remains of her late husband’s savings. The grateful creature knew where it was kept; and whilst the Indians were busied examining the rifles and other objects more interesting to them, had carried it off unobserved. Waving her arm around to shew that all was now quiet, she pointed in the direction of Wilton’s house, and was again lost among the trees.

Day was just breaking when Susan reached the squatter’s cabin. Having heard the sad story, Wilton and two of his sons started immediately for the spot. Nothing was to be seen save a heap of ashes. The party had apparently consisted of only three or four Indians; but a powerful tribe being in the neighbourhood, they saw that it would be too hazardous to follow

them. From this time Susan lived with the Wiltons. She was as a daughter to the old man, and a sister to his sons, who often said: ‘That, as far as they were concerned, the Indians had never done a kindlier action than in burning down Susan Cooper’s hut.’

SIR JAMES BALFOUR’S COLLECTION OF MANUSCRIPTS.

SIR JAMES BALFOUR of Denmiln was a Scottish antiquary, and a collector of antiquities and manuscripts in the seventeenth century. He must not be confounded with that Sir James Balfour of the preceding century, who was concerned in the death of Cardinal Beaton, but was so little actuated by Protestant feeling that Knox, with his usual euphony, branded him as ‘Blasphemous Balfour.’ The subject of this notice was the son of a Fife laird with a numerous family, and he raised himself by his industry and capacity. The fertility of his race must have been such as no Scottish family possessions could have kept up with. If we believe Sir Robert Sibbald, the father of Sir James saw 300 of his descendants before he was committed to the earth, and a younger son, Sir Andrew, lived to see 600 descendants of his father alive. It is clear that the Balfours must have known how to make their own way in the world, and Sir James was not the only one of them who in his own generation was distinguished. He formed a literary acquaintance and association with many of the ablest Scotsmen of his day—such as Drummond of Hawthornden, Gordon of Straloch, Pont, Scott of Scotstarvet, author of ‘the Staggering State of Scots Statesmen,’ and the like. His own principal pursuits would scarcely have conferred literary distinction on him in later times—they were in the twin sciences of heraldry and genealogy—then enrolled among the noblest of sublunary studies. He obtained his reward by being appointed Lord Lyon King-at-Arms. It is rare that a person obtained at that period a high office through sheer study and zeal for his favourite subject, especially an office so intimately associated with the aristocracy of the country and their most cherished honours and distinctions. Their honours were, however, confined to true and zealous keeping. Doubtless many who have studied the arts which recommend them to the aristocracy have worked with their tongues in their cheeks, looking to the reward while they secretly despised the occupation. Balfour, however, it is evident, sincerely adored heraldry and genealogy. His sincerity is evinced by a long list of his works, left by his friend Sir Robert Sibbald, beginning thus:—‘A Treatise of Surnames in General, but especially of those in Scotland;’ ‘A Treatise of the Order of the Thistle;’ ‘An Account of the Ceremonies used at the Coronation of King Charles I. at Holyrood House;’ ‘The Ceremonies used at the Coronation of King Charles II. at Scone, &c.;’ ‘An Account of the Coats of Arms borne by the Nobility and Gentry of Scotland.’ Such is the mere commencement of a list which it would be a tiresome enough task to read through.

Balfour, in following out his genealogical researches, collected any letters and documents which might throw light on them. Though he wrote what he conceived to be a history of Scotland, and left annals of his own times, his chief service to the present day has been his collection of documents. Many of them have been doubtless dispersed; a circumstance to be regretted, if we may judge of their interest and value from those which have been preserved.

In the year 1698, the fragment of his collection of manuscripts remaining in the possession of Balfour’s descendants was offered for sale: it was purchased by the Faculty of Advocates for £150. This was a considerable sum for that period in Scotland, that it is necessary to anticipate questions and say, that it was

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sterling, not Scots money. The collection is still in the Advocates' Library, forming a range of flexible sheep-skin covered volumes, the state of which does credit to their binder; for after having been consulted and tossed about for more than a century and a half, they appear in very good condition.

The contents of these volumes are so varied and curious, that it would occupy a considerable space to give a mere cursory view of them. There are not, so far as we know, any memorials of those who have been solely known as literary men in the collection. Among the multitude of memorials of the later days of Queen Elizabeth and the reign of James, we question if there is a word to throw light on the dramatic literature of Shakspere and his contemporaries; there is not even, we believe, any letter from the collector's own friend, the Scottish Petrarch. The collection contains, however, many letters by Lord Bacon; for Bacon was a peer and a lord chancellor, and therefore was illustrious according to the ideas of the Lyon King-at-arms. These letters may be found with others in the ample collection of all Bacon's known writings, edited by Basil Montagu. In looking over the originals, one is apt to smile on observing the pains taken to make the letters addressed to King James legible; while the others are written in the illustrious philosopher's ordinary careless manner. There is nothing wonderful, perhaps, in this difference taken by itself. It is a piece of natural etiquette to write distinctly to person of superior rank. It is when the rank awarded to the two parties—Bacon and King James—by posterity is considered, that it becomes strange to look at the calligraphy of the author of the new philosophy.

There are specimens of King James's own sacred handwriting in Balfour's Collection: no doubt he thought them much more valuable than Bacon's. They are, in reality, very curious. It is seldom that the handwriting so closely represents the character. It is pedantic and feeble in the extreme; so much so, as to be very like the writing of a schoolboy just put into small text. He writes, to be sure, on some nervous matters of state: as, for instance, a paper called 'The true State of the Question whether Peacham's case be Treason or not.' Peacham was the poor clergyman who was condemned to death for having in his possession a sermon reflecting on King James: it was not preached, and it was never clear that he intended to preach and publish it. His condemnation was anxiously desired by the modern Solomon; and it was an object which created dissensions between the sterner supporters of the law and those judges who wished to favour the prerogative. King James took it as a personal matter, and it is perhaps to this that the extreme shakiness of his schoolboy text is to be attributed. He writes, in a more easy and manly way, in another letter in the same collection, which he concludes: 'From the castell of Croneburg, quhaire we are drinking and dryving our in the auld maner.'

This letter, which has been printed more than once, was addressed to Alexander Lyndsay of the Balcarres family, whom he afterwards made Lord Spynie. James was, when he wrote it, on the expedition to Denmark, which ended in his bringing home Queen Anne—an episode altogether out of the way of the ordinary routine and character of his history. The 'drinking and driving our' at Cronberg was probably deeper than any he had seen even in Scotland. The Danish prince came over with a train of jolly fellows to see his connection when he was king of the whole island of Britain. The drunkenness of the Danes, and the scenes exhibited at the court of Theobalds—never very decent—scandalised the British courtiers even of those days. Sir John Harrington's account of a masque given on that occasion has been often quoted, but is amusing enough to bear repetition. He says: 'The entertainment and show went forward; and most of the presenters went back-

ward, or fell down, wine did so occupy their upper chambers. Now did appear in rich dress Hope, Faith, and Charity: Hope did assay to speak, but wine rendered her endeavours so feeble, that she withdrew, and hoped the king would excuse her brevity. Faith was then all alone, for I am certain she was not joyed with good works, and left the court in a staggering condition. Charity came to the king's feet, and seemed to cover the multitude of sins her sisters had committed. In some sort she made obeysance, and brought gifts, but said she would return home again, as there was no gift which Heaven had not already given His Majesty. She then returned to Hope and Faith, who were both sick in the lower hall.'

This is not altogether inappropriate to the collection of papers left by Sir James Balfour, since there are among them many letters by King James's queen, Anne of Denmark. Historians have been puzzled about her character. On the whole, what is known of her is favourable; and any disagreeables have been explained by the view that she was a clever woman—at least clever enough to know the proprieties of her position, and be keenly alive to the ridiculous figure her husband sometimes cut—but not one with a powerful enough mind to command him and put him right. There are several autograph letters by this queen to her husband in Balfour's Collection. They are generally very pretty pieces of writing. The Italian hand, as it was called, was the favourite accomplishment of royalty in that age; and if one were judging from the mere lines and angles as they strike the eye, the queen's letters would be pronounced of a much later date than the other manuscripts in the collection, and might be attributed to a treasury clerk of George III.'s reign. Her letters are, on the whole, amusing. Here is one in which she is in anger; and it is blotted and interlined—a contrast to the formal neatness of the others:—

'SIR—What I have said to Sr Roger is trew—I could not but think it strange that any about your Matie durst presume to bring neir where your Matie is, or that had offered me such a publicke scorne, for honor gois befor lyfe, I must ever thing so. Humble kissing your Matie hands, I rest ever yours, ANNA R.'

In her anger she writes *thing* instead of *think*—a natural enough occurrence. There were many little quarrels between her and the king, of which we may find light traces in the annalists of the period. She often complained, but in vain, of slights and affronts. James was generally disposed to look over these where it was only his queen who was concerned, and recommended her to make light of matters. It was so, for instance, when she wished him to visit upon Lord Marr his wife's pertinacity in retaining the custody of Prince Charles in spite of all court and state authorities. But though he was bitter enough when his own sacred person was assailed, he would not be at the trouble of quarrelling with any one for the sake of his queen.

Some of Queen Anne's letters in this Collection shew that she was a witty woman—as, for instance, this, which speaks for itself:—

'Your Maty's letter was wellcome to me. I have bine as glade of the faire wether as your selff. The last part of your letter you haue guessed right—that I wold laugh. Who wold not laugh both at the persons and the subject, but more af so well a chosen Mercurie between Mars and Venus? You knowe that womene can hardlie keepe counseil. I humble desire yr M to tell me how it is possible that I shold keepe this secrete that have alreadie tolde it, and shal tell it to as manie as I speake with. If I were a poete, I wold make a song of it, and sing it to the tune of Three fooles well mett. So küssing your hands, I rest yours, ANNA R.'

There is something that can only be expressed by the foreign word *piquancy* in the sight of this actual letter, written in its pretty, sharp, angular Italian, on

a small piece of paper, with the silk thread that bound it, and the little seal.

In the same thin volume there are other curious little memorials of King James and his family. All readers of history will remember how callously he was thought to have behaved to his daughter the queen of Bohemia. We might admire his character, if the interest of the people had prevented him from dragging those he governed into family quarrels; but in successively deserting his mother and his daughter, the world has judged that he thought entirely of himself. His daughter's letters have a pathetic, appealing tone. They are generally in French—one at least in Italian; but the following, in English, may be quoted as a fair specimen:—

'*Sⁿ*—Being desirous by all the meanes I can to keep myself still in your M remembrance, I would not let pass so good an occasion as this bearer returning for England to present my most humble dutie and service to your M, by these beseeching your M to continue me still in your gracious favour, it being the greatest comfort I have to think that your M doth vouchsafe to love and favour me, which I shall ever strive to deserve, in obeying with all humbleness whatsoever whatsoever your M is pleased to command her, who shall ever pray to God with all her hart for your M happiness, and that she may be ever worthy the title, *S^r*, of your M most humble and obedient daughter and servant,

ELIZABETH.

Heidelberg, this 20 of October.

Au Roy.'

A letter from this queen of Bohemia's son to King James tells its own story only partially in print, since one would require to have before him the round, laboriously-constructed vowels and consonants, all put in a straight row, however, to feel how entirely boyish a production it is:—

'*Sⁿ*—I kisse your hand. I would faine see your matie. I can say Nominative lie haec hoc, and all 5 declensions, and a part of pronomen and a part of verbum. I have two horses alive, than can goe up my staires, a blacke horse and a chesnut horse. I pray God to bless your matie. Yor maties obedient grandchild,

FREDERICK HENRY.

To the king.'

Perhaps we may not unaptly associate with this a still more juvenile letter from a person of far more importance in our British world—the uncle of the Prince Palatine, and our Charles I. It, too, is addressed to King James, and it is brief, from the circumstance of the child's powers being evidently considerably exhausted in the effort:—

'*SWEETE SWEETE FATHER*—I learne to decline substantives and adjectives. Give me your blessing. i thank you for my best man. Your loving son,

YORK.'

We cannot help coupling with this a letter to his brother, printed in Birche's Collection, in the same affectionate tone, but fuller and more kindly:—

'*SWEET SWEET BROTHER*—I thank you for your letter. I will keep it better than all my graith: and I will send my pistoles by Maister Newton. I will give anie thing I have to you, both herss and my bookes, and my pieces and my cross bowes, or any thing that you would haive. Good brother, loove me, and I shall ever loove and serve you. Your looving Brother to be commanded,

YORK.

It would be unpleasant, after these affectionate effusions, to notice some later and disagreeable indications of the character of King Charles, contained in the documents to which we have been so amply referring;

and we shall close this article with a letter written when he was seventeen years old—half way between his happy childhood and his miserable maturity:—

'*SIR*—Not wiling to omit anie occasion to wryte unto your M^te, I could not chuse but take hould of this occasion, by the going of S^r Hen Rich, to present my humble seruice unto your M^te. I am sorie for nothing but that I cannot be with your Ma^te at this tyme, both because I would be glad to wait upon you, and also to see the cuntrie whair I was borne, and the customes of it, so fearing to trouble your Mat^te too muche with my ydel letter, I rest your Mat^te most humble and obedient sone and servant,

CHARLES.

Greenwiche, the 23d of May 1617.
To the King's most excellent Majestie.'

JAMES SMITH OF DEANSTON.

The world is not so grateful to its practical workers as might be desirable. While enjoying the benefit of their labours, it amuses itself with singing the praises of the brave or brilliant; till in a few years the origin of an invention that has perhaps given a new impetus to civilisation may become the subject of doubt and controversy. The world, however, is hardly to be blamed for an indifference which arises from an almost necessary ignorance; for only a few are capable of comprehending the principles of the invention, and it is natural that the many should by and forget their benefactor in the indulgence of the fruits of his labours. A man was taken away from us last year, however, whom we should be sorry to see included in the list of the great forgotten; for he was a strong-hearted, earnest, practical man—a man who saw clearly what he had to do in the world, and who went through his peculiar functions with untiring energy and zeal. This man was James Smith of Deanston; a place which he found a barren wilderness, and converted by his science into a model farm.

James Smith was born at Glasgow on the 3d of January 1789. His parents were of the respectable middle orders of society, his father being a merchant, and his mother the daughter of a landed proprietor—Mr James Buchanan of Carston. To the brother of his mother, Mr Archibald Buchanan, may be traced the direction and development of his nephew's mental powers; for with him the family resided after the elder Smith's death, and by him the boy was early familiarised with those studies which were destined to give the man his rank and place in the country. Mr Buchanan, indeed, was the originator of some of the most important of the inventions which his nephew afterwards carried to perfection and gave to the world. He had been a pupil of Arkwright, and is characterised by James Smith as 'a man of singular genius, sound judgment, and great application and perseverance.'

Young Smith's qualifications for the work that was before him were an active mind, a robust body, and a sound practical education. Having acquired some considerable knowledge of mathematics, chemistry, and mechanics, and finished his studies at the university of Glasgow, he was appointed, at the early age of eighteen, to the situation of manager of the Deanston Cotton Works, which his uncle had filled in early life before his connection with James Finlay and Co. He had subsequently been established at Ballindalloch, from whence he had now removed to the works at Catrine. The Deanston Works had now become the property of the eminent firm to which his uncle belonged, and of which another

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of the partners was the distinguished merchant Kirkman Finlay; and at an age when young men of the day were usually employed in that peculiar department of industry known as the sowing of wild oats, James Smith found himself engaged in regenerating a vast business that had fallen into dilapidation, and in assembling, training, and controlling a body of about eleven hundred workpeople. For such duties he was fitted by the three qualifications we have mentioned, the absence of any one of which would have been fatal to his usefulness; and the same hardy, intelligent, and instructed youth, who prided with a reforming eye into the mysteries of the works, and regulated the education, manners, and morals of the human machines, engaged during his earlier years in athletic games with his men, followed the grouse over the moors, and shared liberally in the gaieties and socialities of the country side.

In No. 371 of the first series of this Journal will be found a comprehensive account of the works, and of the handsome village which sprang up in connection therewith, and under Mr Smith's direction, in this vale of the Teith, in the southern part of Perthshire. The manager was not satisfied with dictating the laws of the community. He knew every inhabitant by name, person, and character; visited at the houses; and by encouragement, reproof, or instruction, kept all to their duty. Drunkards were turned out as useless members, and other offenders were punished either by temporary banishment or entire expulsion. That everything was done in a wise and kindly spirit is demonstrated by the fact, that a turn-out of the men was unknown at the Deanston Works even in those years most distinguished for anarchy, and in spite of deputations sent by Glasgow to induce them to revolt. But Mr Smith did not merely secure the affections of his people, and elevate them in comfort and respectability—he likewise obtained from them, for the benefit of their employers, the maximum of work.

His inventions in tool-making and machinery, and his achievements in engineering, are important, although it is not on them his reputation rests. His self-acting mule, however, may be mentioned as being of special value. It was not tried first at Deanston, but came rapidly into general use, Mr Smith making a considerable sum by the patent. His contrivance, likewise, for completing and rendering secure a bridge, the foundations of which had been laid in a deep quagmire, spread his fame as an engineer far and wide; and the principle of the well-known Deanston salmon-ladder was applied to waters of a similar kind in many other rivers. The ladder consists of two longitudinal beams placed along the sides of any large sloping channel in which the current is too strong to be overcome by the fish. Cross-beams or steps are fixed to those sides, and extend alternately about two-thirds of the distance across; thus forming pools or eddies, in which the salmon rest on their journey upwards.

Agriculture, however, is the field in which Mr Smith became best known; and in the midst of his multitudinous avocations he always found time for visiting the farms in his neighbourhood, and for gathering and exchanging knowledge on the subject of the cultivation of the earth. His machine for cutting corn attracted great attention; but practically it was found unfit for general use, since its efficiency depended on the ground being perfectly level, without ridges or furrows. In land-draining and deep-working of the soil, however, he was eminently successful, and he demonstrated the correctness of his theories on these subjects by experiments on one of the most unpromising farms that could have been selected. 'The land,' says a writer in the 'Farmers' Magazine' of September 1846, 'consisted chiefly of the drifted débris of the old

red sandstone, and of various texture; some parts of the subsoil consisting of hard compact soil with stones, and some in the hollows of sandy clay, composed of the soil which had been washed for ages from the higher parts of the ground: the whole was very much interspersed with large boulder-stones, some of them very near the surface. The active soil was in general very thin, in many places not exceeding four inches. Most of the surface was studded with rushes and other water plants, whilst the higher knolls were covered with heath, furze, and broom.' This stubborn piece of land, consisting of about 200 acres, he determined in the first place to subject to thorough-drainage; believing, as he had been taught by his uncle, Mr Buchanan, that a dry condition of the soil is essential in our country to all good husbandry.

Few of our readers would be interested by a minute account of the system of drainage; but we may explain that the deep cross-drains formerly in use served only to carry off the under-water, while the furrow-drains of the flats of Stirlingshire dealt only with the rain-water. It was Mr Smith's idea to combine both; and he carried over the whole field in parallel lines a series of drains, about twenty feet apart, and thirty inches deep. This proved to be one of those great conceptions which, however simple in appearance, are destined to be the foundation of all improvement in the art to which they apply; but the invention of the subsoil-plough (described in No. 262, first series) was not only supplementary to this, but in itself a prodigious achievement. Common ploughing stirs only the active soil, which deep ploughing in the common way would deteriorate by intermixing with it the inactive subsoil. An instrument, however, which stirs the subsoil without bringing it to the surface would gradually, by the admission of air and water into the inert mass, confer upon it the principle of activity, without interfering in any way with the already active soil. On these two inventions—thorough-draining and subsoil-ploughing—all subsequent agricultural improvements rest; and by this means the wilderness we have described exhibited in a few years the cultivation of a garden, with an active soil no longer confined to a few inches, but sixteen inches in depth.

In 1831 Mr Smith published in a local channel a paper on Thorough-draining and Subsoil-ploughing, in which he states that by these means, together with an improved system of cultivation, the agriculturists of this country would be enabled to compete successfully with those of any other country in the world. It was not till the parliamentary inquiry, however, into the agricultural distress of 1834, that general attention was called to the subject. Mr Smith was examined by the committee; and the chairman, Mr Shaw Lefevre, in a letter to the Speaker of the House of Commons, referred to his evidence as pointing to the only plans likely to promote the general improvement of agriculture, and help the farmers out of their dilemma. Deanston now became a show-farm. A pilgrimage thither was essential to the aspiring agriculturist; and strangers from all parts of the British islands, the continent, and America, flocked to the vale of the Teith. Here they not only found a farm of 200 acres under garden culture, but a scene in other respects, as a journalist says, 'as pleasing to the eye as it was interesting to the intellect and the heart. The fields were conveniently laid off, kept very clean, and fenced generally with pretty white-thorn hedges, or when the situation required it, with ornamental belts of thriving plantations, which afforded protection to the crops and shelter to the flocks. Water for the supply of the fields and for the cattle was obtained from tanks fed by the drains, and pumped into the water-troughs by an ingenious but simple arrangement; and there was not an open ditch on the whole farm. The crops in the season were usually luxuriant—a thorough and uniform dryness having been

acquired over the whole surface by the new system of working.' Among the improved implements, the invention of Mr Smith, to be seen in operation, were the web-chain harrow and turn-wrist plough, by the latter of which his fields were worked in one uniform surface, without ridge or furrow. In manures and other matters connected with cultivation his experiments were incessant. In addition to all these avocations, this remarkable man was one of the most active magistrates of the county, and for more than twenty years he commanded a troop in the yeomanry cavalry of the district.

If strangers from all countries resorted to Deanston as to a school of agriculture, it may be supposed that the effect upon the neighbourhood was in the highest degree beneficial. The surrounding proprietors adopted many of the improvements of this model farm, and the result of well-drained fields, well-ordered farm-steadings, and well-manured soils, was earlier, heavier, and better crops. Then came the social triumphs of Mr Smith. Dinners were given in his honour, and speeches made in his praise, by the rich; while the poor not only esteemed him as a benefactor, but loved him as a friend. 'Those who have visited him,' says the same writer we have last quoted, 'will recollect with interest the lighted-up faces which constantly marked his appearance at the works—the smiles and curtsies which were showered upon him from cottage doors as he drove past—and, above all, the quick, bright glance of recognition and kindly nod with which such greetings were invariably acknowledged and responded to. No "monarch of all he surveyed" was ever, indeed, more thoroughly and deservedly popular; for none, while conferring the substantial benefits which attend industry, order, and mechanical ingenuity, has better understood and practised the kindly acts of lightening the burden of toil to the labourer by a due interposition of pleasure and amusement, and of softening its pain by the constant exercise of a humane and generous sympathy.' This intelligent writer adds—and he speaks from intimate personal knowledge—that the affectionate simplicity and cordiality of his domestic intercourse; 'the unwearied activity, industry, and energy of the man, with his many hearty sociable qualities; his cheerful, buoyant spirit, and keen relish of existence—all combined to make the very atmosphere in which he lived as healthful and bracing as it was genial and everyday delightful.'

The time, however, at length arrived when Mr Smith was to relinquish the management of the Deanston Works, and to remove from a place which he had such good reason to regard as a home. Much unnecessary mystery has been preserved by his friends upon this point, which appears to us to be perfectly simple. At the time it occurred, in 1842, the great company, of which he was the local manager, and which had liberally assisted him in all his experiments and improvements, had lost Mr Kirkman Finlay and Mr Archibald Buchanan; and the severe depression in the national trade, which had then continued for four or five years, rendered it proper for the surviving partners to devote themselves exclusively to their own business. Under such circumstances it may well be conceived that a person of such large and various views, and incessant activity of spirit, must have found himself gradually in a hampered position; and likewise that the company, while honouring the manager and loving the man, must have been compelled to see, as he did himself, that a separation was unavoidable. However this may be, the parting was as cordial as the companionship had been useful and agreeable; and Mr Smith, bidding adieu to his beautiful Deanston, went southward to 'fresh fields and pastures new.'

In Manchester chiefly the patents he had taken out for machinery were in operation; but London was the place naturally chosen by Mr Smith for his residence;

and here, in Whitehall Place, he took up his abode with his widowed sister, Mrs Buchanan, and her daughter. A letter he now addressed to Sir John Gladstone of Fasque, 'On the Profitable Employment and Comfortable Subsistence of the Increasing Population of Great Britain,' received wide circulation. The object, of course, was to illustrate the leading idea of his life—that an improved system of agriculture will double the produce of the land. Soon after his arrival in London he was appointed one of the Commissioners of Inquiry into the sanitary condition of large towns; and his labours suggested to him an idea, the working out of which is still one of the most interesting of all the problems that occupy the minds of projectors and engineers—the application of the waste sewerage waters to agricultural purposes. His plan was to convey the liquid manure to the necessary distance by means of pipes; and John Martin, the well-known artist, adopted this as an improvement on his magnificent scheme for cleaning and beautifying the Thames. Mr Smith's paper on the sewerage was published in the Appendix to the 'Report of the Health of Towns' Commission.'

Mr Smith now busied himself, and to some extent successfully, with introducing the Deanston system of agriculture into Ireland, and on various occasions he received the thanks of the Irish Agricultural Society. He was less successful in Sir James Matheson's island of Lewis, where he and the benevolent millionaire attempted—we fear in vain—to improve both the land and the savage population. During the railway mania he was fully occupied as an engineer in examining and estimating the land over which the lines were proposed to be carried. Simultaneously with all this labour his busy brain was teeming as usual with inventions. Plans for the 'dip of sheep' instead of smearing with tar, for improvements in farm-steadings, for housing cattle, for watering in droughts, for a new application of his salmon-ladder, and for many other objects, were flitting before him, some in embryo, and some completely formed.

He was now sixty-one. The quarry of his mind had only been worked deeply enough to shew that it was inexhaustible; and although not free from the partial ailments incidental to advancing years, his elasticity of mind seemed to promise him length of days to confer new benefits upon the world, and to reap the fruits of his genius. It is worth while to pause here, to observe what manner of man this was in his external appearance. His person hardly, if at all, reached the middle height. He was broad-chested and muscular, like one who could plant his foot upon the ground and receive the shocks of fortune like a rock; yet his quick, earnest eye and active limbs shewed that his strength was for advance, not resistance; that when obstacles came in his way he would not stand still in endurance, but push boldly through them. He was, in fine, a man who had a hopeful and courageous look, sanguine yet practical, whose very physical bulk seemed formed to contend with those material elements wherein lay his business on the earth.

Now, this man, at the time we have arrived at, proceeded to Scotland on his affairs; and, accompanied by his gentle and loving niece, went to visit his cousin, Mr Archibald Buchanan, at Kingcleshieugh in Ayrshire. Here he was in his element, and a score of years younger, no doubt, from the associations that rushed upon his heart. One day—it was in the evening of the 9th of June 1850—he went to bed apparently in his usual health. What waking dreams may have flitted before his eye ere he slept—what new ideas he may have caught at in their flight to garnish them up for the morrow—what projects may have chased each other through his restless brain—it is impossible to tell: but that was his last night in the world. Without previous illness, and without pain, James Smith passed suddenly away, leaving behind him the memory

of a kindly, amiable, earnest man—a man who had performed zealously the work intrusted to him by God, and whose labours will long be felt in their influence upon the progress of the human kind.

THINGS TALKED OF IN LONDON.

June 1851.

THE Exhibition continues to be an absorbing subject in more ways than one, as most of our west-end shopkeepers have found out by the exiguity of their exchequer. In the supereminent attractions of the Crystal Palace minor considerations appear to be lost sight of: mercers complain that silks and satins remain unsold on their shelves in consequence of the grander display in Hyde Park; cabinetmakers mourn over undiminished stocks of chairs and tables; chemists aver that pharmacy was never less in request; and empty benches are seen at theatres to a much greater extent than is agreeable to managers. How can it be otherwise? After spending their money and their time in the Great Exhibition people are too economical and too tired for any other pursuit of business or pleasure; and while the commissioners are taking their thousands daily, there is so much diverted from the pockets of retailers. Yet with all this flow towards the Industry of the Nations, our streets, at the time I write, are far from being overthronged, as was predicted. In such traffic as there is, however, the preponderance is decidedly westward, and shewn by the presence of well-dressed pedestrians on the footways, evidently more intent on pleasure than business. At present, expectation is uncommonly lively as to what the Whitsun holidays will produce. If realised we shall then have an overwhelming influx; but, as I hear, the railways cannot well bring more than twenty thousand per day.

I was at the Exhibition from the opening to the close on the third of the shilling days, when more than forty thousand people were in the building. What an extraordinary scene of life and movement they presented! To stand at the angle of the transept gallery and look down on the animated multitudes passing in all directions in the grand central avenue was in itself a spectacle of an astonishing character. The buzz of countless voices, the tread of thousands of feet on the cleanly-swept floors, the clash and play of the fountains, with an occasional distant blast from the organs, or a roulade on the pianos, formed a combination of sound overpowering in its vastness and continuity—such as impresses you with a feeling half of awe, that the idea of a concourse of nations has been fully realised, and makes it difficult to leave the contemplation for the more active business of examination in detail.

A general glance having been taken of the contents of this wonderful place in No. 387 of the Journal, I can only venture further upon a curiosity. No need now to go to Constantinople to see a Turkish bazaar, for here is one with its awning of striped purple and white, its stalls studded with stars and crescents, and displaying manufactures of such exquisite fabric and workmanship as to elicit an unqualified expression of surprise and admiration. I heard a lady lament that she had not been born in Turkey, that she might have worn the dainty and decorated slippers, the brilliant silks and brocades, and magnificent shawls which hung so temptingly around her. It was something to convince yourself by ocular demonstration of such taste and skill on the part of the Mussulmans. And yet when one looked at their rude agricultural implements placed by themselves in a corner, and contrasted them with the highly-wrought manufactures but a few feet away, it was scarcely possible not to draw a fair inference as to the social condition of the people by whom they were produced. There needed but little imagination to fancy yourself really on the shores of the

Bosphorus; for an old, gray-bearded Turk, wearing a fez and loose garments, sat grave and cross-legged in the midst of his goods, surrounded by three or four younger compatriots similarly attired.

The pendulum experiment is still a subject of discussion, still argued *pro* and *con* with different qualities of logic. Briefly stated, the question now stands thus: Professor Baden Powell gave his lecture on the phenomenon, as I told you in my last; but he admitted that the subject was 'beset with difficulties,' and but few of his audience were able to comprehend his reasoning. Mr Wheatstone endeavoured to explain the difficulty by something still more difficult—namely, a stretched spiral wire which, if made to vibrate vertically, changed the direction of its vibrations to horizontal immediately on the frame to which it was attached being turned half round. Then, again, the experiment has been tried at the Institution of Civil Engineers, and succeeded beautifully—too well, in fact, for the pendulum got through as much of its work in three-quarters of an hour as it ought to have done in six hours. Further, several of our most able mathematicians still deny *in toto* the hypothesis on which the whole argument is based—the immutability of the plane of vibration. If this be disproved the whole theory tumbles to the ground. We are promised, however, that the question shall be set at rest by a paper which will come before the Royal Society and the British Association. We are then to learn that neither the wire nor the bob of the pendulum rotates as hitherto supposed; that both are as independent in this respect as if suspended from a point unconnected with the earth; that the side of the bob facing the south at the commencement of the experiment will still face the south at the end. Those who may desire to try it will do well to remember one important fact—which is, that the longer the wire of the pendulum the more accurate will the results appear to come out, while in reality the error will be greater than with a short wire. Still, as a mathematical formula has now been constructed for the elimination of the error, an experiment even with a long wire, if faithfully conducted, may help towards a solution of the difficulty. Believers in the theory say, that before long the experiment will become a familiar one in class and lecture rooms.

Astronomers are talking about the total eclipse of the sun which is to occur on the 28th of July next, and preparations are being made by the sky-explorers in England, the United States, and other countries, for a trip to those parts of the continent in which the obscuration of the great luminary will be complete. A line drawn from Norway to the Caspian Sea will indicate the line of greatest darkness; and within this, at various points, it is hoped that many trustworthy observations of the interesting phenomenon will be obtained. The astronomer-royal has given a lecture on the subject at the Royal Institution, in which the appearances to be more especially noted, and the importance attaching to them, were stated with his usual ability. Another matter that has come before them is the name for the new planet recently discovered by Mr Hind; the one proposed satisfies both the ancient mythology and present philosophy. It is to be Irene (Peace), and represented in astronomical tables by the symbol of a dove with an olive-branch. Some people will be gratified at knowing that Mars meets with a counterpoise even among the planets. And last, concerning sidereal topics, is the fact that Leverrier, in an able memoir recently laid before the Académie, disputes the assumption that bolides or meteors are minor satellites of the earth, and disproves it by proof derived from the laws of mathematics and of motion.

To refer again to our Institute of Civil Engineers: they have been debating about railways in Egypt, and a canal across the Isthmus of Suez. Mr Robert Stephenson, who has lately paid a visit to the land of

the Pharaohs, talks about its engineering capabilities in a way which provokes much lively discussion among those who write M.I.C.E. after their names. Should it lead to the formation of one or the other line of travel, overland voyagers will not rebuke them for talking. As far as can be predicated, it seems pretty certain that if a speedy traverse of the American isthmus is to be effected, the African one will soon be rendered similarly available.

Apropos of America: the Royal Mail Company are about to add two new steamers to their New York and Boston line; and instead of sailing but twice a month as heretofore during the winter, will run a vessel weekly throughout the year: Holyhead to be their port. Storms and bad weather will have to give in to the spirit of enterprise. The project, too, for the grand Atlantic and Pacific Railway across the American continent is again talked of, on this as well as the other side of the ocean. Mr Whitney, the proposer of the scheme, offers, if Congress will grant him a strip of land sixty miles wide all across the country from Lake Michigan to the bay of San Francisco, to construct the line without the aid of money-grants from government or of public companies. His plan is, supposing the land made over, to lay down the first ten miles of road, which being done, will render the lands on either side valuable. These, for a breadth of fifteen miles, are then to be sold, and a second ten miles of rail laid down with the proceeds; and so on, selling and road-making, until the whole shall be complete, when the surplus lands and overplus of funds, if any, are to belong to the projector and his heirs. The line would commence at the southern extremity of Wisconsin, from whence to New York—more than 1000 miles—there is already abundant means of communication by railway and steamboat; which leaves 2030 miles of new road to be laid down. The first 800 miles comprise prairie grounds, well suited, it is said, for agricultural purposes; then come the slopes of the Rocky Mountains, and the descent into California. The project is certainly a magnificent one; and such is the pushing nature of the American character, that no doubt is entertained of the possibility of accomplishment by the means proposed. If carried out, it will form a short route to our Chinese and Australian possessions; and should Congress refuse their consent, it is thought that England might undertake the enterprise, as the possibility of constructing a railway from Quebec to Vancouver's Island has more than once been talked about.

Having on former occasions called your attention to what was doing in America in the matter of the electro-magnetic locomotion, I must now give you a few 'latest particulars,' which several of our engineers and mechanicians regard with no little interest. Professor Page has been running an engine on a short line of railway from Washington to Bladensburg. The locomotive, as he states, with the battery fully charged, weighs ten and a half tons, and with a load of seven passengers he made it travel nineteen miles an hour, notwithstanding that, being new, the engine worked stiffly; that the battery-cells broke, owing to the imperfect nature of the clay of which they were composed; and that there was 'a want of insulation in the helices.' These are defects which time and experience will doubtless overcome: meanwhile we must remain content with the professor's account of the trial. He says: 'The running-time from Washington to Bladensburg was thirty-nine minutes. We were stopped on the way five times, or we should have probably made the run in less than thirty minutes. Going and coming there were seven stops and three delays—that is, the engine was backed three times, but without entirely losing headway. It is a very important and interesting feature of this engine, which I demonstrated some years since, that the reversing power is greater than the propelling

power: it is nearly twice as great. When the engine is reversed, the magneto-electric induction is in favour of the battery-current, and augments its effects. The trouble growing out of the oscillating motion of the car can all be obviated by using rotary instead of reciprocating engines.'

To finish with a few miscellaneous items: the citizens of Boston, United States, now have the true time flashed to them daily at noon from the Cambridge observatory, four miles distant; by which the clocks of the city may be regulated, and the captains of vessels lying in the harbour may rate their chronometers.—A philosopher in Philadelphia, who has made a series of microscopical examinations of the hair of the ancient Peruvians, and compared it with that of the present races of Indians, comes to the conclusion that they all belong to the same species.—Electro-magnetic clocks are about to be fixed in various parts of Berlin for the public service, the communications to be effected by means of the wires already stretched to signalise the breaking out of fires.—According to the returns of the Easter book-fair at Leipzig, 3684 works were printed in Germany in the preceding six months, and 1136 were in press—more than 800 a month; not too many, if knowledge be really increased.—Sir John Richardson is at work on a narrative of his overland journey in search of Sir John Franklin, from 1847 to 1849.—Mr Thackeray is adding to his literary fame by his able lectures on the English Humorists of the last century.—Manchester is about to erect a statue in honour of Dalton, the author of the atomic theory.—Mr Wyld's great globe exhibition is open.—And last, though not least, the *twopenny* admission-fee is abolished at St Paul's!

PASSAGES IN THE LIFE OF A DUTCH POET.

The name of Wilhelm Bilderdyk is scarcely known beyond the boundaries of his own country; and yet those who are conversant with the Dutch language place him in a very high rank as a poet. The publication of his first poem, '*Elicius*', formed quite an era in the history of Dutch literature: it was speedily followed by a faithful and spirited translation of the '*Oedipus*' of Sophocles, and versions of other Greek writers. Besides his imaginative pursuits, he engaged with ardour in the study of geology, and almost rivalled Cuvier in his acquaintance with natural history. War and invasion, however, interrupted the labours of Bilderdyk. He quitted Holland, travelled through Germany, crossed over to England, and finally spent some time amongst the Scottish Highlands, where he employed himself in translating Ossian's poems into Dutch verse. He then went to the principality of Brunswick, and there composed a very extraordinary work, '*The Maladies of Wise Men*'—a poem whose mild, lofty sublimity, unearthly interest, and grasp of gloomy thought, entitle it to rank with the '*Inferno*' of Dante.

Bilderdyk at length was able to return to his country. Louis Napoleon, who then reigned at the Hague, chose him as his instructor in the Dutch language, and named him president of the second class in the Institute of Amsterdam. About this time he married a beautiful and talented girl, named Wilhelmina; and for several years they enjoyed together as perfect happiness as this world can give—she occupied in domestic and maternal duties, and he adding to his fame and fortune by the publication of several works. But at length death visited their dwelling, and removed within a brief space three lovely children. Their loss was commemorated by their mourning father in two poems—'*Winter Flowers*', and '*The Farewell*'. Not long afterwards, public misfortune came to aggravate his private sorrows. Louis Napoleon left Holland, and Bilderdyk took refuge at Groningen, where he stayed for some time, and then, rejecting a liberal offer of

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employment made him by William of Orange, he set out for France, accompanied by his wife.

When they entered the diligence they found it occupied but by one person, a young female of mild and engaging appearance. No sooner did the heavy machine begin to move than she began to scream, and testified the most absurd degree of terror. Public carriages that were certainly far inferior, both in safety and accommodation, to those of modern times; yet the probable amount of danger to be apprehended did not by any means justify the excessive apprehension manifested by the fair traveller. On arriving at Brussels, the lady was so much overcome that she announced her intention of stopping some days in that city to recruit her strength before venturing again to encounter the perils of a diligence; and taking leave of Bilderdyk and his wife, she gratefully thanked the latter for the kind attention she had shewn her during the journey. The two Hollanders proceeded on their way to Paris, laughing heartily from time to time at the foolish cowardice of a woman who saw a precipice in every rut, and a certain overturn in every jolt of the wheels.

Arrived at their journey's end, the travellers took up their abode in a humble dwelling in the Rue Richelieu, and commenced with the utmost delight visiting all the wonderful things in Paris. Bilderdyk soon found himself completely in his element. He breakfasted with Cuvier at the Jardin des Plantes, passed his afternoon at the Bibliothèque Richelieu, dined in the Faubourg St Germain with Dr Alibert, and finished the evening at the play or the opera. One day he and his wife were given excellent places for witnessing the ascent in a balloon of a young woman, Mme Blanchard, whose reckless courage enabled her to undertake aerial voyages, despite the sad fate which befell Pilastre de Rosiers, her own husband, and several other aéronauts. Our Hollanders amused themselves for some time with watching the process of inflating the balloon, and following with their eyes the course of the tiny messenger-balloons sent up to ascertain the direction of the upper currents of wind. At length all is ready: the band strikes up a lively air, and Mme Blanchard, dressed in white and crowned with roses, appears holding a small, gay flag in her hand. With the most graceful composure she placed herself in the boat; the cords were loosed, and the courageous adventuress, borne rapidly upwards in her perilous vehicle, soon appeared like a dark spot in the sky.

When he returned to his lodging, Bilderdyk composed a poem in honour of the brave woman who adventured her life so boldly, rivalling the free birds of heaven in her flight, and beholding the stars face to face. Next morning he hastened to get his production printed; and without considering that Mme Blanchard most likely did not understand Dutch, he repaired to her lodgings with a copy of the poem in his hand, intending to ask permission to present it to her. He was courteously invited to enter the drawing-room, and there, to his great amazement, he found himself *tête-à-tête* with the silly, frightened lady, whose nervous tremors in the Brussels diligence had afforded so much amusement to him and his wife.

Surprised and disconcerted, he was beginning to apologise, when the lady interrupted him.

'Monsieur,' she said, 'you are not mistaken. I am Mme Blanchard. You see how possible it is for the same person to be cowardly in a coach and courageous in a balloon.'

A good deal of conversation ensued; the poem was timidly offered, and graciously accepted; and the fair aéronaut accepted an invitation to dine that day with Bilderdyk and his wife.

In the course of the evening Mme Blanchard related to them some curious circumstances in her life. Her mother kept a humble wayside inn near La

Rochelle, while her father worked in the fields. One day a balloon descended near their door, and out of it was taken a man, severely but not dangerously bruised. Her parents received him with the utmost hospitality, and supplied him with all the comforts they could give. He had no money wherewith to repay them; but as he was about to depart, he remarked that the mistress of the house was very near her confinement, and he said: 'Listen, and mark my words. Fortune cannot always desert me. In sixteen years, if alive, I will return hither. If the child who will soon be born to you should be a boy, I will then adopt him; if a girl, I will marry her!'

The worthy peasants laughed heartily at this strange method of paying a bill; and although they allowed their guest to depart, they certainly built very little on his promise. The aéronaut, however, kept his word; and at the end of sixteen years reappeared at the inn, then inhabited by only a fair young girl, very lately left an orphan. She willingly accepted Jean-Pierre Blanchard as a husband, and for a short time they lived happily together; but during an ascent which he made in Holland, he was seized with apoplexy, and fell to the ground from a height of sixty feet. The unhappy aéronaut was not killed on the spot, but lingered for some time in frightful torture, carefully and fondly attended by his wife, whom at length he left a young and penniless widow.

Marie Madeleine Blanchard, despite her natural timidity, resolved to adopt her husband's perilous profession. Pride and necessity combined do wonders; and not only did she succeed in maintaining perfect composure while in the air, but she also displayed wonderful presence of mind during times of danger. On one occasion she ascended in her balloon from Nantes, intending to come down at about four leagues from that town in what she believed to be a large meadow. While rapidly descending, the cordage of the balloon became entangled in the branches of a tree, and she found herself suspended over a vast green marsh, whose treacherous mud would infallibly engulf her. Drawn to the spot by her cries, several peasants came to her assistance, and with considerable difficulty and danger succeeded in placing her on terra firma.

On the day following the one on which she dined with M. and Mme Bilderdyk, Mme Blanchard left Paris, promising her two friends, as she bade them farewell, that she would soon return. Time passed on, however, and they heard nothing of her. They were preparing to return to Holland, when some of Bilderdyk's countrymen residing in Paris resolved to give him a banquet on the eve of his departure.

The entertainment took place at a celebrated restaurant situated at the angle formed by the Rue Cauchat and the Rue de Provence. While enjoying themselves at table, the guests suddenly perceived the windows darkened by the passing of some large black object. With one accord they rose and ran out: a woman lay on the pavement, pale, crushed, and dead. Bilderdyk gave a cry—it was Mme Blanchard! In what a guise to meet her again! Encouraged by the constant impunity of her perilous ascensions the unhappy aéronaut (the word, I believe, has no feminine), finding a formidable rival in Mme Garnerin, resolved to surpass her in daring by augmenting the risk of her aerial voyages. For this purpose she lighted up her balloon-car with coloured lamps, and carried with her a supply of fireworks. On the 6th of July 1819, she rose from amid a vast concourse of spectators. The balloon caught in one of the trees in the Champs-Elysées; but without regarding the augury, Mme Blanchard threw out ballast, and as she rose rapidly in the air she spilled a quantity of lighting spirits of wine, and then sent off rockets and Roman candles. Suddenly, with horror the mass of upturned eyes beheld the balloon take fire, one piercing shriek from above, mingled with the

affrighted cries of the crowd below, and then some object was seen to detach itself from the fiery globe. As it came near the earth, it was recognised as the body of the ill-fated Mme. Blanchard.

Weeping and trembling, Bilderdyk aided in raising the disfigured corpse, and wrapped it up in the network of the balloon, which the hands still grasped firmly. The shock, acting on his excitable temperament, threw him into a dangerous illness, from which, however, he recovered, and returned to his native country. There he published an admirable treatise, 'The Theory of Vegetable Organisation,' and a poem, entitled 'The Destruction of the Primeval World.' A French critic has placed this latter work in the same rank with 'Paradise Lost,' and says: 'Old Milton has nothing finer, more energetic, or more vast in his immortal work.' An English critic, however, would probably scarcely concur in this judgment.

Bilderdyk died in the town of Haarlem on the 18th December 1831.

WHEN FISH ARE IN SEASON, AND WHY.

The period for fish being in season is dependent upon laws as simple as they are universal. In land animals of the genus mammalia, the circumstances of the period of reproduction, and the care and attachment they manifest for their young, have the effect of so seriously deteriorating their structures, that a considerable time elapses before these regain their normal state. The cause of this in the land animals referred to is obvious, for the nourishment which had previously gone to support their own organism now goes to build up and nourish the structures of the young which are in process of development, and thus the mother becomes enfeebled, and her flesh unfitted for the use of man. With the fish of which we propose to treat, the reason for their being out of season is the same, although the circumstances are somewhat different. In the fish, the nourishment, besides supplying the necessary waste in the system of the female, goes at certain seasons to the production and growth of the innumerable ova with which she teems, and in the male to the development of the milt or soft roe, which is indispensable to the conversion of these ova into living creatures. And first of the salmon, the king of our river visitants:-

The proper abode of the salmon is the sea. It is ascertained that the seas around Great Britain, as well as those bordering on the north of Europe, and extending to Asia, form its true habitat. While in the highest state of health, however, the salmon is seldom if ever to be caught in the sea, even at the mouths of our great rivers. It is not until forced, by the instinctive necessity of spawning, to seek a place of safety, that it makes for fresh water; and when this occurs, the scales begin to lose their silvery lustre, the flesh to become soft and pale, and the marine insects which adhered to the bodies in the sea to drop off and die. Thus in addition to their inferior flavour when caught in our rivers, we have manifold evidence of the deterioration and comparatively unhealthy condition of the salmon at such seasons.

The salmon begins to ascend the rivers of Great Britain sooner or later in the spring or summer months. In rivers issuing from large lakes it is to be found early in spring, their waters having been sooner purified by deposition in the lakes. Rivers, again, swollen by melting snows in the spring months, are later, for the fish only begins to ascend them when the lake rivers are beginning to fail. Hence all the rivers in the north of Scotland are earlier than those in the south, or the English rivers. The Tay, the Earn, the Don, the Dee, and all the rivers to the north are earlier supplied with salmon than the Forth, the Esk, the

Tweed, the Humber, the Thames, and others farther south.

In ascending our rivers the salmon is exposed to numerous difficulties, which it must necessarily overcome before it reaches its destination. The strong currents, the shallow and exposed portions of the stream, the various falls which occur in our rivers, are all calculated to impair their strength, and add to that deterioration of structure which infallibly takes place in fresh water. The nervous and muscular energy thus expended enfeebles still more their diminished strength, and assists in increasing that deterioration which their exposure to fresh water had begun. Thus the salmon, by the time it reaches its spawning ground (a considerable way up some small streams), is much exhausted, and the subsequent exertion completes its deterioration, and reduces it to the mere skeleton of what it was when it first entered the mouth of the river. Thus, by the combined operation of these causes, a process of deterioration takes place in the fish from the first moment it enters the fresh water until it returns to the sea, where it speedily recovers its healthy appearance—its muscles increasing in size and strength, a deposition of fatty matter taking place, and its scales recovering their brilliant silvery lustre.

After the young fry reach the sea they are entirely lost sight of for about ten weeks; and we can only infer the rapidity of their growth during this short period, by their then returning to our rivers, weighing from $2\frac{1}{2}$ to 4 pounds, when they are known as the grilse or salmon-peal. After remaining a short period in fresh water they lose their silvery lustre, their fins assuming a dusky appearance. In the ensuing winter most of these grilse spawn; after which they again return to the sea to recover their lost strength, and in the following year attain a weight of from 10 to 15 pounds, and are now first-year's salmon.

The period during which the salmon is in highest condition thus somewhat varies, according as it is early or late in ascending our streams; but, as a general fact, the fish is found in greatest perfection in the sea, at the mouths of our great rivers, before commencing its ascent. Previous to this, indeed, it is believed to be in a still higher state of health; but it is then in deep water, and not to be caught by any bait or process at present known. But, speaking generally, the salmon is finest in quality in February, March, April, May, and June, and continues tolerable during August and September. After it spawns it is thin and lank; its flesh pale and of an insipid flavour; and it is decidedly unwholesome as an article of food.

Cod.—The cod is exclusively an inhabitant of the sea, never even visiting fresh-water streams. It is found only in cold or temperate climates. It does not exist in the Mediterranean, or any other inland sea whose entrance is nearer to the equator than the fortieth degree. It appears, indeed, to be confined to the northern parts of the world, although few have been taken north of Iceland. It abounds, however, on the south and west coasts of that country, and likewise on the coasts of Great Britain and Norway. The cod uniformly keeps in deep water, and never approaches the shore excepting for the purpose of depositing its spawn. The general weight of the cod is from 14 to 40 pounds. The largest cod ever found on the coast of Great Britain was taken off Scarborough in 1755, and weighed 78 pounds; its length was 5 feet 8 inches, and its girth round the shoulders 5 feet. As indicated by the size of its mouth, stomach, and bowels, it is extremely voracious. It preys upon small fish of every description, and the herring and sprat are its favourite food. The cod, however, is far from particular in its choice, for it likewise feeds on worms, mollusca, and crustacea. From thirty to forty small crabs, about an inch and a half in breadth, have

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been taken from its stomach, and the gastric juice of that organ is so strong that the shells and hardest portions are speedily dissolved by it.

The intense voracity of the cod renders it, even in deep water, a more easy prey to the fisherman than almost any other native of the deep. Hence it is that for considerably more than a century well-boats have been constructed for preserving alive fish, principally cod, caught at sea. The cod of commerce is fished, at a depth of from twenty-five to fifty fathoms, by lines and hooks baited with any of the smaller fish or crustacea. Thus it is obtained for our markets in better season than the salmon, for it is caught while in the highest condition of health and strength, long before the muscular fibre of the fish is deteriorated by the development of the roe or milt. This fish is in best season as an article of food in the months of December, January, and February. It begins to deposit spawn in May and June, and for this purpose it frequently ascends the Forth, or other estuary, for upwards of twenty miles. From July to the end of October the large cod are observed to be long and thin, particularly those found on sand-banks or in shallow water, being then of very light colour, with flesh soft, unwholesome, and insipid to the taste.

Haddock.—The haddock likewise inhabits northern and temperate latitudes. It is found in great abundance all round the coasts of Great Britain and Ireland. The largest haddocks have been taken in the Bay of Dublin and neighbourhood. In all their migrations, they haunt together in immense shoals. They are not uniform in frequenting the same spot or locality, but change their haunts, not seemingly obeying any determinate law. This probably proceeds from a natural timidity of disposition, for the same characteristic is shewn in their retreating into deep water during stormy or boisterous weather. During such seasons, indeed, the haddock conceals itself among the sea-weed at considerable depths, and is not then to be taken even with hooks baited with its most favourite food, but it returns immediately to its former haunts upon the subsiding of the storm. These habits of the haddock sufficiently account for the necessity of keeping this fish in salt-water tanks, in order to supply the demand at such seasons, and the consequent high prices which are then demanded for it in our markets.

This fish migrates in larger shoals than any other of the finny tribe, with the exception of the herring, and while in season is procured in great quantities. It begins to be in roe in the middle of November, and so continues until the end of January. During this period it approaches our coast in immense shoals to deposit its ova, when it is caught by our fishermen. It is consequently in best season about the commencement of this period. From the beginning of February, when its spawning is completed, till the end of May, this fish is slender in body, and thin-tailed, and is not wholesome as food. From the beginning of June till the end of September it retreats into deep water, where it gradually recruits and recovers its strength. The haddock ranges in weight from 1 to 14 pounds, for it has seldom or ever been found more than the latter weight. The haddock caught on the Irish coast is said to be the finest in flavour, and is highly appreciated by the epicure.

Whiting.—The whiting is a fish so closely assimilated in character and habits to the haddock, that, with the exception of not being so timid during stormy weather, the same general remarks apply to it. The whiting is in highest condition in November, December, January, and February; and during this period it is recommended to invalids, to whom flesh appears nauseous and sickening. The whiting, when about a foot long, is best adapted for the table; and while in season, is extremely delicate and nutritious, the fish feeding principally on the mollusca and crustacea.

Halibut.—The halibut or holibut is exposed in large quantities in the markets of Great Britain; and from the large size of the fish, is sold by weight. It is only found in the northern seas, and is much used by the natives of Norway, Iceland, and Greenland. It is said by naturalists that holibut have been caught weighing nearly 500 pounds. In 1828 a holibut was exhibited in the Edinburgh market, measuring 7 feet 6 inches in length and 3 feet in breadth, and weighing 320 pounds. It had been caught on the coast of the Isle of Man, and was the largest specimen obtained in Britain within the memory of any person living. This fish resembles the turbot a good deal in flavour, and is even preferred to it by some persons. In the Firth of Forth it inhabits deep and rocky places. It is frequently taken of large size near Inchkeith, or the Bass Rock. It is in best condition in June and July, and continues in tolerably good season till about the end of February, when it spawns. During the following months of March and April it is unwholesome, and unfit for use.

Turbot.—The turbot is well known in our markets as one of the largest of our flat fishes, and is justly prized both for the delicacy of its flavour and its nutritious qualities. It is found in large shoals; and although not capricious in regard to its haunts, it appears, in frequenting certain localities, to be influenced mainly by the presence of the small fish on which it preys. Turbot are caught in considerable quantities on the coasts of Durham and Yorkshire with lines, in a similar manner to cod; but the most extensive turbot-fisheries are those of the Dutch, which commence about the end of March, and are pursued during the months of April and May, and continued till the middle of August, when the fishing is dropped for the year. The produce is principally transported in boats to the London market. From some peculiarity in its organisation, the muscular fibre of the turbot is not so much deteriorated during the growth of the milt and roe as in other fish, and if it could be caught, would be longer in season; but like most of the finny tribe, it is only to be procured when frequenting the coasts which it has selected as its favourite spawning-ground. The turbot spawns in August, after which it becomes feeble and is out of season; but it speedily recovers its strength, and retreats into deep water.

Sole.—The common sole, probably from the comparative smallness of its size, is seldom if ever caught by bait, but only by the trawling-net. Soles are found in great abundance on the coast of England, from Sussex to Devonshire, and on the shores of various counties of Ireland. The sole is full of roe in February, and approaches the shore to spawn about the end of that month or the beginning of March, after which it is extremely soft and watery, and unfit for use. After spawning the sole retreats into deep water, and in the course of six weeks or two months recovers its strength. Like the rest of the finny tribe, its flavour is finest when caught in deep water, before the roe or milt is much developed; but in consequence of being rather shy of bait of any kind, it is not then easily taken. This fish thrives in fresh water, and is there said to grow to double the size of the salt-water sole. It is in good season throughout the entire year, with the exception of the months of February, March, and April.

Skate.—Naturalists describe nine species of skate, all of which are easily to be recognised by their flat rhomboidal form and cartilaginous skeletons. The skate approaches our shores and spawns in the end of July or the beginning of August, after which it retires into deep water, and in the course of two months recovers its strength. As an article of food it is extremely rich and nutritious.

Herring.—The herring, the staple food of the poor in Scotland, and, when in high condition, no less a favourite with the rich, demands our special attention.

It was formerly held by Pennant and the older naturalists that the herring migrated to the coasts of Britain from the arctic seas; but more recent and accurate observation has discovered the fallacy of this notion, for few or none of the British species are to be found in the northern regions; and the fact that the herring frequents different parts of our shores at totally different seasons, has given rise to the belief that they merely retreat into deep water near our coasts, either for a more abundant supply of food, or for some other purpose connected with their recovery. Shoals of herring appear on the coast of Shetland about the middle of June, when the Dutch fishing commences. About the same period the herring appears in great quantities off the shores of Orkney and Caithness, and even so early as May a small species are caught off Thurso. These latter fish are full of roe and milt in August. Herrings in good season, too, are caught between the coasts of Caithness and Orkney about the end of December. Along the coasts of Sutherland, Inverness, and Argyleshire, herrings appear in great shoals about June, and they approach close to the shores in July and August. On these coasts, too, winter herring make their appearance in November, and continue till about the middle of January. The lochs of the West Highlands of Scotland are all more or less frequented by the herring, but their appearance is far from regular or certain in any of them. They are caught about the beginning of June in Loch Fyne and Loch Long; and it is maintained by experienced fishermen that they may be caught in the former loch throughout the entire year. The herrings of Loch Fyne have long been celebrated for their superior quality, occasioned, it is supposed, by the peculiarly nutritious description of their food. Off the rivers Tay and Forth, a few miles from the coast, the Dutch fishermen procure excellent herring in the months of July and August. In the Solway Firth the usual fishing time is in September. On the west side of the Isle of Man it commences about the beginning of September, and the fish are said to be equal in quality to those of Loch Fyne. The coasts of Ireland are visited by immense shoals.

The herring in fact visits the coasts of the islands or of the mainland of the north of Europe at all seasons of the year, and is not influenced by any great general law in its migrations other than that obeyed by the other fish we have mentioned. As a general fact, the herring is in best condition, as an article of food, when it is just approaching our coasts—probably four or five miles off. The roe and milt are only then in process of development, and have not subtracted largely from the strength of the muscular fibre. The healthy condition of the fish, indeed, is easily to be recognised from the firmness of its back and the moderate size of its belly, combined with the size and brilliancy of its scales; for when out of season, these scales drop off, and the body becomes pale and livid. Even after being cured, persons acquainted with herring select those having large and brilliant scales, being a uniform sign of the healthy condition of the creature when caught. The mere outward appearance indeed

of most of the finny tribe forms a clear index to their condition and state of health, and their consequent fitness for the use of man.

SONNET.

BY CALDER CAMPBELL.

Go seek for infant beauty in the field
Where summer flowers their morning fragrance fling;
The solitary gadfly on the wing
Welcomes it there; and with a shining shield
The bee salutes it, passing. Arums wield
Their scarlet sceptres, glowing 'midst a ring
Of spicy avens, that sweet tribute bring
To scent the couch where Nature, sun-revealed,
Cradleth it tenderly with gentle grace!
On mountain and by stream, in woods, where'er
The dewy steps of Flora man can trace,
Be sure that infant beauty nestles there:
The beauty that is born without a sound,
Starting in colours bright from every flower around!

BOWING IN ENGLAND.

In general the English approach ladies without bowing, with the hat thrust on the back of the head, almost down to the neck—and they unceremoniously offer their hand. This constitutes cordiality, and replaces our French politeness. On the part of the ladies this way of meeting is very pretty; but it is grossly rude on the part of the men—they have the air of accosting a lady as they would approach a horse. In relations with the vulgar, you lower yourself by being polite. If you take off your hat on entering a shop, you are served last, and with bad grace. Sometimes even you are taken for a beggar, and are turned out of doors, or have a penny offered you. That actually happened to me in a glove shop in Regent Street.—*Jules de Prémáry.* [M. Jules de Prémáry must be a very miserable-looking Frenchman; for we English are not charitable enough to give a penny to a bow unsupported by other symptoms of distress.]

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